

# Kroger

## Food & Pharmacy

Owner: The Kroger Company, Inc.

General Contractor: McInnis Brothers Construction, Inc | Richard Harris: (318) 861-0221

EOR: Smith Engineering, Inc. | Brian Smith (318) 741-1088

Specialty Engineer: Cutler-Gallaway Services, Inc. | Earl Cutler: (210) 496-3326

Completion Date: August, 2009 | Lift Amount: 8"

## **PROJECT SUMMARY — KROGER #539**

**Project Description:** Kroger #539 is located in Sheveport, Louisiana in a very high end shopping center bordered by Barnes & Noble and Starbucks. The tilt wall structure was built over reclaimed land, and a 40' deep filled gorge. Settlement began before construction was completed. Compaction grouting and installation of 430 minipiles failed to arrest the settlement which was measured at more than 12" which affected much of the store's operation.

**Subsurface Conditions:** The additional 15' of fill dirt needed to raise the site grade, coupled with the filled gorge overloaded and compressed the underlying soils creating a "drag down" effect which overloaded the original cast in place concrete shafts and the previous repair efforts. A dense sand layer located between

60' and 70' below grade was determined to offer the best solution for re-supporting the structure.

**Design Details:** Driven piles were excluded from repair options due to the 12' overhang, which would require removal of large portions of the roof, and substantial noise disturbance to neighboring stores, not to mention extended closure of the store. The EOR specified piles with 300 kip ultimate capacity providing a 2.0 to 1.0 factor of safety. Power Lift installed (118) 7" O.D. Helical Piles with 24" helical plates 1" thick to depths of 60' to 80'.

The project consisted of providing piles to support and raise the existing tilt wall structure and support approximately 16,000 sq ft of new 8" thick suspended concrete floor. All work was completed while the store remained fully



## **PROJECT SUMMARY — KROGER #539 (CONTINUED)**

functional, closing only small areas at a time.

The piles were installed using specially designed attachments for Power Lift's equipment allowing piles to be installed with as little as 12' of headroom. In low overhead clearance areas the piles were installed in 10' sections. A specialized process weld was developed to provide full penetration welds in approximately 10 minutes per connection. Each pile was installed to a minimum installation torque of more than 80,000 ft/lbs. to insure the 300 kip ultimate capacity was achieved. After all piles were installed, the structure was raised more than 8" using Power Lift's proprietary lifting equipment and is now permanently supported on Power Lift piles.

